

for producing cathedrals, palaces, *et id genus omne*, unprecedented scope is given for the designing of a secondary rank of edifice, still of high importance and value in the scale of art. Churches, schools, almshouses, hospitals, workhouses, railway stations, and termini, exchanges, town-halls, markets, club-houses, &c. &c., have multiplied, and continue to do so to an extent surprising. The latter especially have given a new impulse to Italian design, and present some superior adaptations of the palazzi of that country. The efforts now making by the Royal Institute and other societies of architects for the ennobling of the art and the directing of the studies of the rising generation of artists into such channels as shall be productive of important results to the art, are another feature of the times.

Much as has been done since the prevailing style of the Adams was thought to be the production of taste and talent, much more must be effected ere our metropolis can present the features which our wealth, industry, and perseverance should effect.

To arrest the flight of the shaft of foreign ridicule would be impossible, but to make ourselves proof against its point and its poison is fully within our power.

A. F. A.

THE VENTILATION OF SEWERS.

NOTWITHSTANDING the check that sanitary reform has received in the postponement of the "Health of Towns Bill," the agitation of the question has had the good effect of awakening public attention to the vast importance of the subject, in its relation both to health and morality. The salubrity of the atmosphere in populous districts can only be effectually maintained and fitted for healthy respiration by a complete system of drainage, and thorough ventilation. It is satisfactory to see medical men foremost in the rank, and taking advantage of their peculiar position to expose to public view every flagrant neglect of the proper authorities, and exerting themselves strenuously to effect sanitary changes wherever they are deemed necessary or found to be advantageous. Much honour is due to such men as the late Dr. Lynch, Dr. S. Smith, and others, for their strenuous exertions in the cause of sanitary reform, and we are convinced that men were never more in real earnest to accomplish their object, for we find them risking health and even life itself in the cause. The late report of the proceedings at Bow-street, where thirty-five individuals were summoned to answer to that extensive nuisance which has from time immemorial been accumulating in the arches of the Adelphi, and infecting the whole contiguous neighbourhood, is fresh in recollection; its compulsory removal by the parish or other authorities, has hitherto been effectually resisted upon the plea of its being private or extra-parochial property; but through the exertions of a medical gentleman residing directly over the nuisance, Mr. Luttie, assisted by Dr. Goulden, Mr. Berry, and other professional friends, the cause of complaint, we trust, will be effectually removed.

An adjourned inquest of fearful interest was lately held upon a poor man, who, while in a tin-called water-closet, was instantly destroyed by a sudden gush of offensive and noxious vapour. The case occurred, as our readers know, in a densely populated court leading out of Long Acre. So great was the amount of offensive gas suddenly emitted, that the whole neighbourhood was described as being contaminated. Mr. Berry, of James-street, Covent-garden, the medical gentleman who was summoned to give his evidence, proved to the coroner and jury, that the fatal event arose from foul air gradually accumulating, and suddenly set free; he called the attention of the court to the disgraceful state of drainage in the whole of that densely populated district. He at the same time exhibited some models for the purpose of demonstrating how effectually and easily offensive gases may be removed and carried away before there was time for their dangerous accumulation. He proposed by means of appropriate apparatus, to cause a constant current of air to circulate through sewers, drains, and other confined places, where offensive vapours may accumulate. He proposed to form a pipe or chimney from the sewer, to pass beneath the pavement and be carried up the side of a house or wall in the neighbour-

hood; it is to be furnished at its summit with a revolving wind-propeller connected with a fan, screw, or blower, so that the stream of foul air shall be always flowing in one direction, viz., upwards. At the same time he would throw a stream of pure air downwards into the sewer by shafts in the road with revolving wind propellers, moving a screw, fan, or blower. Mr. Berry further proposes to use, in situations where great power might be required, the fluid of the sewer itself as the motive agent, taking advantage of a fall or declivity in its course to propel a water-wheel, connected by means of shafts and multiplying wheels with the screw or blower. In situations where the application of these suggestions would be inconvenient or impracticable, an upward current, he suggests, might be preserved by introducing into a tube or chimney jets of gas, for the purpose of heating copper plates or copper gauze placed within the chimney, so that the air in contact with these becoming highly rarified, would necessarily ascend, producing a partial vacuum which would be filled from the foul air of the drain beneath. The foul air at the same time would be partially consumed.

RAILWAY JOTTINGS.

THE wear of cast-iron rails has been estimated in *Thompson's Colliery Inventions and Improvements*, thus:—On a line over which, for eighteen years, 200,000 tons weight were annually conveyed, — 60,000 tons of empty waggons in one direction, and 140,000 tons of coals in the other,—the waste was about one pound per lineal foot of rail in course of the three years, or 557 pounds per mile of road per annum, the rails being cast from cold-blast-pig-iron. The waste is considered to be altogether mechanical, on the ground that there is no chemical waste from oxidation on rails in regular use, the heat occasioned by the traffic preventing oxidation,—very doubtful and ultra-scientific considerations these, surely, although the traffic is known to keep the rails clear of rust, a fact by no means identical with prevention of oxidation, which best in general promotes instead of retarding. Hot-blast cast rails Mr. Thompson considers much more liable to wear, still more to breakage, and requiring one-half more metal for competent weight and strength,—malleable of course much less liable to either breakage or wear, and the more highly wrought the more economical in all respects—as well as much more safe for public use he might have added.—An ingenious plan has been matured, by a correspondent of a scientific periodical, for the prevention of evil consequences from collisions of passenger trains. The inventor proposes that a "patent railway buffer" or live "director" be attached to an iron "chair" in front of the engine, in order to "break" the force of the meeting between the up and down traffic. One peculiar advantage of such an arrangement would be, that one solitary "buffer" could be sacrificed at the worst in each collision, while many breaks and many buffers would be saved. The inventor ought to be tested forthwith by a fair trial on one of our leading lines of railway.—The Post Office authorities have quietly taken possession of the power to monopolize the carriage of small parcels by railway. This they have virtually accomplished under the Act passed at the close of the late Parliament, "for giving further facilities for the transmission of letters by post, and for the regulating the duties of postage thereon, and for other purposes relating to the Post-office." By this act the Post-office may transmit a ton-weight if they choose, and at any rate they may choose for all weights above the penny letter weight. They have also power to dispatch their packages by train without a mail guard, so that they may swallow up the whole parcel traffic of trains in one enormous mass, without the smallest adequate compensation or compensation. It does not necessarily follow, however, that the public are to be sufferers by such a monopoly; it may be the very reverse, and at any rate Mr. Rowland Hill, or other P. O. authority, announces a determination to carry the Act already into execution.—The Blackwall railway directors, in announcing a dividend of only

1s. 6d. per share, clear of income-tax, state that "the concurrent circumstances which have diminished the receipts of so many other railways have also operated prejudicially upon this company."—Visitors give a cheering detail of the sanitary and other progress coincident with the railway development in Essex. Stratford has now become a most important place. The hitherto quiet marshes near the Thames are now in a state of commercial bustle and activity, and in this locality the most extraordinary metamorphoses have been produced. Around the station at the Barking-road a new town is being formed. The model cottages on the Barking-road are said to be in advance of any thing they have seen for the industrious classes; each possesses a garden back and front, an entrance porch, a sitting-room, kitchen, and wash-house, with oven and boiler, and above, three bedrooms, with handsome painted iron bedsteads. At Stratford, the Hudson New Town progresses rapidly, and the health and comfort of the poor have also been attended to there.—The various contracts for the Manchester, Sheffield, and Lincolnshire line, are in a more or less rapid and advanced state of progress. The viaduct at Sheffield has been let to Messrs. Miller, Blackie, and Shittridge. At Handsworth tunnel, the No. 2 contract have quarried a large quantity of excellent stone for the Sheffield viaduct and other works. The Rother viaduct No. 3, has been commenced. No. 4, from Retford to Linsay, has been let to Messrs. John Waring and Sons. At Clabrough tunnel, all the shafts are down and further progress made. The Trent bridge at Gainsboro, stopped by the Admiralty, is now progressing, as Kirtou tunnel and other works also are. The stations here and on the Market Rasen branch to Lincoln are also let to Mr. Kirk, of Stratford. The New Holland jetty and haven entrance has been let to Mr. Linn. The dock works at Grimsby, are in an advanced state of progress, and the whole area of the dock and wharfs is expected to be reclaimed by the time for next half-year's report. The Thurgald coal branch contract has been let to Messrs. Miller and Blackie.—A large and deep shaft at the Stalybridge tunnel on the Manchester and Huddersfield line, has been completely filled by a quicksand while the contractors were about to arch the tunnel. Such it is said is the nature of the sand here, "that the contractor is obliged to have recourse to an unusual mode of excavating—in fact, totally different from ordinary mining operations. The men remove about 30 feet square in the soil, and having got it to a sufficient depth (30 feet) the brickwork of the tunnel is completed, and then the soil is replaced over the arches." It was one of these excavations that gave way. The damage done is not less than 1,000*l.*, and the foundations of some houses have been so injured that they will have to be taken down. This will involve a loss to the company of from 3,000*l.* to 4,000*l.*—The direct taxes, exclusive of income tax on dividends, paid by the London and North Western Company, is said to exceed 10,000*l.* per annum.—The Emperors of Russia and Austria have forbidden any person of company to construct lines of electric magnetic telegraph within the limits of their respective dominions, without their special permission.—When the Wharfedale line of telegraph is completed, says an American paper, "the charges will be as follows:—From Wharfedale to Pittsburgh, the toll for ten words costs some twenty cents; from Pittsburgh to Philadelphia, fifty cents for fifteen words or less; and from Philadelphia to New York, twenty-five cents for ten words. To get ten words from Wharfedale to New York, costs ninety cents, which is too high. We should like to see all the companies agree upon uniform rates of charging; and the best method for this purpose would be to charge two, three, four, or five cents for each word."

ARCHANGEL NEARLY DESTROYED BY FIRE.—It is reported by the Dublin agent of an Archangel firm, that on the first instant two-thirds of this important sea-port town were burned down, and five to six thousand people rendered homeless, from what exciting cause is not yet known.

* During the past session, Mr. Vasey laid before the Committee of Architects a scheme of rail ventilation proposed.